pennsylvania
DEPARTMENT OF ENVIRONMENTAL PROTECTION

Southwest Regional Office
CLEAN WATER PROGRAM

Application Type	**Renewal**	Application No.	**PA0216763**
Facility Type	**Industrial**	APS ID	**275100**
Major / Minor	**Minor**	Authorization ID	**1259403**

NPDES PERMIT FACT SHEET INDIVIDUAL INDUSTRIAL WASTE (IW) AND IW STORMWATER

Applicant and Facility Information

Applicant Name	**Municipal Authority of the Borough of Somerset**	Facility Name	**Coxes Creek WTP**
Applicant Address	347 West Union Street	Facility Address	3518 Coxes Creek Road
	Somerset, PA 15501-1543		Somerset, PA 15501
Applicant Contact	Michele Enos	Facility Contact	Larry Couch
Applicant Phone	(814) 443-2661	Facility Phone	(814) 445-2111
Client ID	64334	Site ID	3805
SIC Code	4941	Municipality	Somerset Township
SIC Description	Trans. & Utilities - Water Supply	County	Somerset
Date Application Received	December 19, 2018	EPA Waived?	No
Date Application Accepted	June 13, 2019	If No, Reason	Discharge to TMDL

Purpose of Application: Renewal of NPDES Industrial Waste Permit without an ELG.

Summary of Review

The Department received a late NPDES permit renewal application from the Municipal Authority of the Borough of Somerset for the Coxes Creek Water Treatment Plant located in Somerset Township of Somerset County on December 19, 2018. A supplemental submission was received by the Department on April 16, 2019, which updated the application monitoring data. The initial monitoring data provided in the application contained a number of parameters that were tested at quantitative limits (QL) above the Department's Target QLs. These parameters would have been required to be added to the permit monitoring requirements and were not believed to be in the wastewater. Additionally, the facility provided a summary of historic monitoring data results for Outfall 002 on May 22, 2019. The facility is a potable public WTP with a SIC Code of 4941. The facility's existing permitted industrial waste discharge consists of treated filter backwash water, filter bed water and filter-to-waste water. The filter backwash is conveyed to the lagoon, and then ultimately discharged to Trib 39004 to West Branch Coxes Creek via Outfall 001. Outfall 002 discharges lagoon underdrain groundwater to Trib 39004 to West Branch Coxes Creek.

The Coxes Creek WTP (plant pumping capacity rated at 0.864 MGD) purifies water obtained from three (3) ground water wells (Well #7, #8 and #9). The Coxes Creek WTP is used to supplement the water supply from the Authority's other WTPs. If the water supply from the other WTPs is adequate, then the Coxes Creek WTP is offline. The NPDES permit renewal application provides average and peak flow information that reflected the historic limited use of the plant. Recently, the operation of the plant has shifted to seven (7) days per week. Since December 2018, the eDMR data reflects this change in operations and reports higher flow then historic values. The average of the eDMR average flow values was used for the development of the permit effluent limitations and was calculated to be 0.04 MGD.

The raw water has chemicals added (Potassium Permanganate, Hydrofluoric Acid, and the plant has the ability to pre-chlorinate) then goes through an in-line mixer prior to entering the mixing tank. The water is then treated by one (1) of two (2) filter beds. The filtered water then entering the clearwell. From the clearwell the treated water has Ortho Polyphosphate added prior to entering the distribution system. Finished water from the clearwell is used to backwash the filters. Once the backwash

Approve	Deny	Signatures	Date
✓		Curtis Holes, P.E. / Environmental Engineering Specialist	8/13/19
✓		Michael E. Fifth / Environmental Engineer Manager	8/14/19

Summary of Review

process is completed, each filter goes through a "filter-to-waste" period that ends once turbidity reaches acceptable levels. While the turbidity remains above the acceptable levels, the water is classified as filter-to-waste water and is directed to the lagoon.

Accumulated lagoon solids are manually transferred to the sand drying beds as required, then the dried solids are disposed of at a permitted landfill. The liquids from the sand drying beds are conveyed back to the lagoon. Often the lagoon water is recycled back to the head of the plant. Wastewaters generated at the facility are filter backwash water, sand bed filter water and filter-to-waste water. The wastewaters are conveyed to the lagoon, which allows the solids to settle out prior to being discharge to the Trib 39004 to West Branch Coxes Creek.

Residual waste disposal must meet solid waste regulations.

Part C language in the draft permit provides controls on floating solids, chemical additives, residual solids, Total Residual Chlorine and Sedimentation Basin Cleaning.

It is recommended that a draft permit be published for public comment in response to this application.

Public Participation

DEP will publish notice of the receipt of the NPDES permit application and a tentative decision to issue the individual NPDES permit in the *Pennsylvania Bulletin* in accordance with 25 Pa. Code § 92a.82. Upon publication in the *Pennsylvania Bulletin*, DEP will accept written comments from interested persons for a 30-day period (which may be extended for one additional 15-day period at DEP's discretion), which will be considered in making a final decision on the application. Any person may request or petition for a public hearing with respect to the application. A public hearing may be held if DEP determines that there is significant public interest in holding a hearing. If a hearing is held, notice of the hearing will be published in the *Pennsylvania Bulletin* at least 30 days prior to the hearing and in at least one newspaper of general circulation within the geographical area of the discharge.

Discharge, Receiving Waters and Water Supply Information

Outfall No.	001	Design Flow (MGD)	0.04
Latitude	40º 01' 31.15"	Longitude	-79º 07' 58.28"
Quad Name	Bakersville	Quad Code	1812
Wastewater Description:	Treated filter backwash water, sand filter bed water and filter-to-waste water.		
Receiving Waters	UNT to West Branch Coxes Creek	Stream Code	39004
NHD Com ID	69915989	RMI	0.14
Drainage Area	1.07	Yield (cfs/mi^2)	0.0192
Q_{7-10} Flow (cfs)	0.0206*	Q_{7-10} Basis	USGS StreamStats
Elevation (ft)	2010	Slope (ft/ft)	
Watershed No.	19-F	Chapter 93 Class.	WWF
Existing Use		Existing Use Qualifier	
Exceptions to Use	None	Exceptions to Criteria	None
Assessment Status	Impaired		
Cause(s) of Impairment	Siltation		
Source(s) of Impairment	Agriculture		
TMDL Status	Final February 23, 2009	Name	Coxes Creek Watershed
Nearest Downstream Public Water Supply Intake	Indian Creek Valley Water Authority		
PWS Waters	Youghiogheny River	Flow at Intake (cfs)	64.7
PWS RMI	Approximately 62.5	Distance from Outfall (mi)	>40 miles

Changes Since Last Permit Issuance: Plant operations has transitioned from limited to seven (7) days per week.

Other Comments: *The StreamStats calculated Q_{7-10} flow (0.0124 cfs) was adjusted to account for the standard errors of prediction from the low-flow regression equation. The low-flow standard errors of prediction for Region 4 was reported as 66 percent. The higher error associated with the Q_{7-10} flow regression equation may be partly attributed to deep mining that might not be reported in USGS Pennsylvania Water-Data Report. The calculated Q_{7-10} flow (0.0206 cfs) for Outfall 001 discharge location was adjusted the 66 percent standard error up to 0.0206 cfs. The only parameter this adjustment was applied is for the TRC evaluation.

Figure 1: Basin Delineation for Outfall 001

Discharge, Receiving Waters and Water Supply Information

Outfall No.	002	Design Flow (MGD)	0.001*
Latitude	40º 01' 28"	Longitude	-79º 07' 58"
Quad Name	Bakersville	Quad Code	
Wastewater Description:	Lagoon underdrain groundwater.		
Receiving Waters	UNT to West Branch Coxes Creek	Stream Code	39004
NHD Com ID	69915989	RMI	0.08
Drainage Area	1.11	Yield (cfs/mi^2)	0.0112
Q_{7-10} Flow (cfs)	0.0129	Q_{7-10} Basis	USGS StreamStats
Elevation (ft)	2004	Slope (ft/ft)	
Watershed No.	19-F	Chapter 93 Class.	WWF
Existing Use		Existing Use Qualifier	
Exceptions to Use	None	Exceptions to Criteria	None
Assessment Status	Impaired		
Cause(s) of Impairment	Siltation		
Source(s) of Impairment	Agriculture		
TMDL Status	Final	Name	Coxes Creek Watershed
Nearest Downstream Public Water Supply Intake	Indian Creek Valley Water Authority		
PWS Waters	Youghiogheny River	Flow at Intake (cfs)	64.7
PWS RMI	Approximately 62.5	Distance from Outfall (mi)	>40 miles

Changes Since Last Permit Issuance: None

Other Comments: *Outfall 002 discharges groundwater from an underdrain. Application states that the flow varies, 0.001 MGD is used during effluent limit development.

Figure 2: Basin Delineation for Outfall 001

Compliance History

DMR Data for Outfall 001 (from December 1, 2017 to November 30, 2018)

Parameter	Limit	MAR-19	FEB-19	JAN-19	DEC-18	NOV-18	OCT-18
Flow (MGD) Average Monthly	Report	0.0277195	0.0519190	0.0397525	0.0410421	0.00003	0.00004
Flow (MGD) Daily Maximum	Report	0.2492146	0.4151200	0.3574597	0.3281017	0.32810	0.00006
pH (S.U.) Instantaneous Minimum	6.0	7.8	7.6	7.7	7.77	7.72	7.65
pH (S.U.) Instantaneous Maximum	9.0	8.0	8.0	8.1	8.00	8.07	7.86
TRC (mg/L) Average Monthly	0.5	0.13	0.08	0.38	0.09	0.16	0.10
TRC (mg/L) Instantaneous Maximum	1.17	0.32	0.12	0.97	0.14	0.30	0.21
TSS (mg/L) Average Monthly	30.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	4.0
TSS (mg/L) Instantaneous Maximum	60.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	4.0
Total Aluminum (mg/L) Average Monthly	1.3	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Total Aluminum (mg/L) Instantaneous Maximum	2.6	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Fluoride (mg/L) Average Monthly	4.0	0.20	0.15	0.20	0.20	0.2	0.2
Fluoride (mg/L) Instantaneous Maximum	8.0	0.20	0.20	0.20	0.20	0.2	0.2
Total Iron (mg/L) Average Monthly	2.0	< 0.08	< 0.15	< 0.17	< 0.20	0.19	0.44
Total Iron (mg/L) Instantaneous Maximum	4.0	< 0.10	< 0.20	< 0.23	< 0.30	0.27	0.48
Total Manganese (mg/L) Average Monthly	1.0	0.04	0.08	0.11	0.12	0.16	0.18
Total Manganese (mg/L) Instantaneous Maximum	2.0	0.06	0.10	0.19	0.22	0.21	0.20
Total Zinc (mg/L) Average Monthly	0.22	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Total Zinc (mg/L) Instantaneous Maximum	0.44	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01

DMR Data for Outfall 002 (from April 1, 2018 to March 31, 2019)

Parameter	Limit	MAR-19	MAR-19	DEC-18
Flow (MGD) Average Quarterly	Report	0.0277195	0.00002748	0.00000017
Flow (MGD) Daily Maximum	Report	0.2492146	0.00112147	0.00001026
pH (S.U.) Instantaneous Minimum	6.0	7.8	7.0	7.45
pH (S.U.) Instantaneous Maximum	9.0	8.0	7.0	7.86
TRC (mg/L) Average Quarterly	0.5	0.13	0.365	0.04
TRC (mg/L) Instantaneous Maximum	1.17	0.32	0.670	0.06
TSS (mg/L) Average Quarterly	30.0	< 2.0	< 2.0	< 2.0
TSS (mg/L) Instantaneous Maximum	60.0	< 2.0	< 2.0	< 2.0
Total Aluminum (mg/L) Average Quarterly	1.3	< 0.10	< 0.10	< 0.10
Total Aluminum (mg/L) Instantaneous Maximum	2.6	< 0.10	< 0.10	< 0.10
Fluoride (mg/L) Average Quarterly	4.0	0.20	< 0.10	< 0.1
Fluoride (mg/L) Instantaneous Maximum	8.0	0.20	< 0.10	< 0.1
Total Iron (mg/L) Average Quarterly	2.0	< 0.08	< 0.10	< 0.10
Total Iron (mg/L) Instantaneous Maximum	4.0	< 0.10	< 0.10	< 0.10
Total Manganese (mg/L) Average Quarterly	1.0	0.04	< 0.010	< 0.01
Total Manganese (mg/L) Instantaneous Maximum	2.0	0.06	< 0.010	< 0.01
Total Zinc (mg/L) Average Quarterly	0.22	< 0.01	< 0.010	< 0.01
Total Zinc (mg/L) Instantaneous Maximum	0.44	< 0.01	< 0.010	< 0.01

Compliance History	
Summary of DMRs:	None
Summary of Inspections:	The last inspection conducted by the Department was on January 14, 2019 by Lisa Milsop and no violations noted.

Other Comments: None

Development of Effluent Limitations

Outfall No. 001 **Design Flow (MGD)** 0.04
Latitude 40º 01' 31" **Longitude** -79º 07' 58"
Wastewater Description: Treated filter backwash water, sand filter bed water and filter-to-waste water.

Technology-Based Limitations

The Coxes Creek WTP is not subject to Federal Effluent Limitation Guidelines (ELGs) as the SIC code is not listed under 40 CFR parts 405 through 471.

Regulatory Effluent Standards and Monitoring Requirements

The pH effluent range for all Industrial waste process and non-process discharges pursuant of 25 Pa. Code § 92a.48(a)(2) and 25 Pa. Code § 95.2 is indicated in Table 1 below.

Flow monitoring is required pursuant to 25 Pa. Code § 92a.61(d)(1) as indicated in Table 1 below.

Pursuant to 25 Pa. Code § 95.2(4) effluent standards for industrial wastes may not contain more than 7 mg/L of dissolved iron as indicated in Table 1 below.

Pursuant to 25 Pa. Code § 92a.48(b) the imposition of technology-based Total Residual Chlorine (TRC) limits for facilities that use chlorination and that are not already subject to TRC limits based on applicable federal ELG's or a facility specific BPJ evaluation as indicated in Table 1 below.

Table 1. Regulatory Effluent Standards

Parameter	Monthly Avg.	Daily Max	IMAX
Flow (MGD)	Monitor	Monitor	----
Iron, Dissolved	----	----	7.0 mg/L
pH (S.U.)	6-9 at all times		
TRC	0.5 mg/L	----	1.6 mg/L

Total Dissolved Solids (TDS)

Integral to the implementation of 25 Pa. Code § 95.10 is the principle that existing, authorized mass loadings of TDS are exempt from any treatment requirements under these provisions. Existing mass loadings of TDS up to and including the maximum daily discharge loading for any existing discharge, provided that the loading was authorized prior to August 21, 2010 are exempt. Discharge loadings of TDS authorized by the Department are typically exempt from the treatment requirements of Chapter 95.10 until the net TDS loading is increased, an existing discharge proposes a hydraulic expansion or a change in the waste stream. If there are existing mass or production-based TDS effluent limits, then these are used as the basis for the existing mass loading. The facility is not new or expanding waste loading of TDS, therefore, the facility is exempt from 25 Pa. Code § 95.10 treatment requirements.

Best Practicable Control Technology Currently Achievable (BPT)

The Department's reference document *Technology-Based Control Requirements for Water Treatment Plant Wastes* (DEP-ID 362-2183-003) established BPT for discharges of WTPs wastewater, which are illustrated in Table 2 below.

Table 2. BPT Limits for WTP Filter Backwash Wastewater

Parameter	Monthly Avg. (mg/L)	Daily Max (mg/L)
Total Suspended solids (TSS)	30.0	60.0
Iron (total)	2.0	4.0
Aluminum (total)	4.0	8.0
Manganese (total)	1.0	2.0
Flow	Monitor	----
pH (S.U.)	6-9 at all times	
TRC	0.5	1.0

Water Quality-Based Limitations

Total Maximum Daily Load for Streams Impaired by Abandoned Mine Drainage in the Coxes Creek Watershed

On February 23, 2009, EPA approved the Coxes Creek Total Maximum Daily Load (TMDL) to address metals, suspended solids, and in some areas depressed pH, associated with abandoned mine drainage in the Coxes Creek watershed in southwestern Pennsylvania. The TMDL was established in accordance with Section 303(d)(1)(c) of the Clean Water Act to address impairments of water quality as identified on Pennsylvania's Section 303(d) lists. The TMDL addresses the three primary metals associated with abandoned mine drainage (iron, manganese, aluminum) and pH.

Section 303(d) of the Clean Water Act and the U.S. Environmental Protection Agency's (EPA) Water Quality Planning and Management Regulations (codified at Title 40 of the Code of Federal Regulations Part 130) require states to develop Total Maximum Daily Loads (TMDLs) for impaired water bodies. A TMDL establishes the amount of a pollutant that a water body can assimilate without exceeding its water quality standard for that pollutant. TMDLs provide the scientific basis for a state to establish water quality-based controls to reduce pollution from both point and nonpoint sources to restore and maintain the quality of the state's water resources (USEPA 1991a).

Somerset Borough Coxes Creek Water Treatment Plant was assigned wasteload allocations ("WLAs") from the Coxes Creek TMDL for iron, aluminum, and manganese at its outfall. The TMDL allocated loads and concentrations for Outfall 001 are shown in Table 3.

Table 3. TMDL WLAs for Outfalls.

Pollutant	Allocated Load (lbs/yr.)	Allocated Concentration (mg/L)
Outfall 001		
Aluminum	0.28	1.3
Iron	0.43	2.0
Manganese	0.22	1.0
Outfalls 002 & 003		
Aluminum	1.17	1.3
Iron	1.80	2.0
Manganese	0.90	1.0
Outfall 005		
Aluminum	0.0033	1.3
Iron	0.0050	2.0
Manganese	0.0025	1.0

The facility has removed Outfalls 003 and 005 by conveying those discharges to the lagoon, which discharges via Outfall 001. The TMDL allocated concentrations will be applied to the permit monitoring requirements.

Toxics Screening Analysis – Procedures for Evaluating Reasonable Potential and Developing WQBELs

DEP's procedures for evaluating reasonable potential are as follows:

1. For IW discharges, the design flow to use in modeling is the average flow during production or operation and may be taken form the permit application.

2. Perform a Toxics Screening Analysis to identify toxic pollutants of concern. All toxic pollutants whose maximum concentrations, as reported in the permit application or on DMRs, are greater than the most stringent applicable water quality criterion are pollutants of concern. [This includes pollutants reported as "Not Detectable" or as "<MDL" where the method detection limit for the analytical method used by the applicant is greater than the most stringent water quality criterion]. List all toxic pollutants of concern in a Toxics Screening Analysis section of the fact sheet (refer to Attachment C).

3. For any outfall with an applicable design flow, perform PENTOXSD modeling for all pollutants of concern. Use the maximum reported value from the application form or from DMRs as the input concentration for the PENTOXSD model run.

4. Compare the actual WQBEL from PENTOXSD with the maximum concentration reported on DMRs or the permit application. Use WQN data or another source to establish the existing or background concentration for naturally occurring pollutants, but generally assume zero background concentration for non-naturally occurring pollutants.

    - Establish limits in the draft permit where the maximum reported concentration equals or exceeds 50% of the WQBEL. Use the average monthly and maximum daily limits for the permit as recommended by PENTOXSD. Establish an IMAX limit at 2.5 times the average monthly limit.

    - For non-conservative pollutants, establish monitoring requirements where the maximum reported concentration is between 25% - 50% of the WQBEL.

    - For conservative pollutants, establish monitoring requirements where the maximum reported concentration is between 10% - 50% of the WQBEL.

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The information described above including the maximum reported discharge concentrations, the most stringent water quality criteria, the pollutant-of-concern (reasonable potential) determinations, the calculated WQBELs, and the WQBEL/monitoring recommendations are collected on a spreadsheet titled "Toxics Screening Analysis." (refer to Attachment C).

The previous permit required Total Zinc and Fluoride to be monitored and reported. The two-year average effluent limit for Total Zinc is <0.01 $^{mg}/_{L}$ and the most stringent criterion of 0.129 $^{mg}/_{L}$. The two-year average effluent limit for Fluoride is 0.02 $^{mg}/_{L}$ and the most stringent criterion of 2.0 $^{mg}/_{L}$. Also, the Toxics Screening Analysis no longer requires the monitor/report of both these parameters. The StreamStats calculated Q_{7-10} flow (0.0124 cfs) and adjusted Q_{7-10} flow (0.0206 cfs) both yield the same results of removing Total Zinc and Fluoride from the permit monitoring requirements. For these reasons, Total Zinc and Fluoride are being removed from the monitoring requirements.

WQM 7.0 Model

In general, WQM 7.0 Model is run if the maximum BOD_5/$CBOD_5$ concentrations exceeds 30/25 mg/L respectively in the permit application or the DMRs. The permit application reports BOD_5/$CBOD_5$ concentrations of <2 mg/L, therefore, WQM 7.0 Model is not required to be run.

Total Residual Chlorine

To determine if WQBELs are required for discharges containing total residual chlorine (TRC), a discharge evaluation is performed using a DEP program called TRC_CALC created with Microsoft Excel for Windows. TRC_CALC calculates TRC Waste Load Allocations (WLAs) through the application of a mass balance model which considers TRC losses due to stream and discharge chlorine demands and first-order chlorine decay. Input values for the program include flow rates and discharge chlorine demands for the receiving stream, the number of samples taken per month, coefficients of TRC variability, partial mix factors, and an optional factor of safety. The mass balance model calculates WLAs for acute and chronic criteria that are then converted to long term averages using calculated multipliers. The multipliers are functions of the number of samples taken per month and the TRC variability coefficients (normally kept at default values unless site specific information is available). The most stringent limitation between the acute and chronic long-term averages is converted to an average monthly limit for comparison to the BAT average monthly limit of 0.5 mg/L from 25 Pa. Code § 92a.48(b)(2). The more stringent of these average monthly TRC limitations is then proposed. The results of the modeling, included in Attachment B, indicate that AFC limits are required for TRC (average monthly limit of 0.080 mg/L and daily maximum limit of 0.188 mg/L).

During this permitting cycle, the TRC effluent limitation is more stringent then the previously permitted limitation. The driver for this change is the stream Q_{7-10} flow value. The previously used Q_{7-10} flow value was determined from a known stream Q_{7-10} flow multiplied by the ratio of drainage areas of the known watershed and the outfall watershed. The Q_{7-10} flow was determined for the existing permit using USGS StreamStats program. The StreamStats program was the selected method for this permit cycle because the water quality monitoring station historically used had 4 years of data from the late 1960's. StreamStats calculated Q_{7-10} flow is lower than the previously used Q_{7-10} flow, causing more stringent effluent limitations.

Schedule of Compliance

TRC at Outfall 001 will have a compliance schedule to give the facility time to implement the required changes to be able to achieve the new WQBELs effluent limits, pending the return of the Pre-Draft Permit Survey for Toxic Pollutants. The Draft Permit was developed assuming a three (3) year compliance schedule before the new WQBEL takes effect at the beginning of the second year of the renewed permit. During the interim period (one year after permit effective date) the previous permit effluent limit for TRC will be imposed (0.5 $^{mg}/_{L}$ monthly average and 1.17 $^{mg}/_{L}$ daily maximum).

Anti-Backsliding

Section 402(o) of the Clean Water Act (CWA), enacted in the Water Quality Act of 1987, establishes anti-backsliding rules governing two situations. The first situation occurs when a permittee seeks to revise a Technology-Based effluent limitation based on BPJ to reflect a subsequently promulgated effluent guideline which is less stringent. The second situation addressed by Section 402(o) arises when a permittee seeks relaxation of an effluent limitation which is based upon a State treatment standard of water quality standard.

Previous limits can be used pursuant to EPA's anti-backsliding regulation 40 CFR 122.44 (l) *Reissued permits.*

> *(1) Except as provided in paragraph (l)(2) of this section when a permit is renewed or reissued. Interim effluent limitations, standards or conditions must be at least as stringent as the final effluent limitations, standards, or conditions in the previous permit (unless the circumstances on which the previous permit was based have materially and substantially changed since the time the permit was issued and would constitute cause for permit modification or revocation and reissuance under §122.62).*
> *(2) In the case of effluent limitations established on the basis of Section 402(a)(1)(B) of the CWA, a permit may not be renewed, reissued, or modified on the basis of effluent guidelines promulgated under section 304(b) subsequent to the original issuance of such permit, to contain effluent limitations which are less stringent than the comparable effluent limitations in the previous permit.*
> > *(i) Exceptions – A permit with respect to which paragraph (l)(2) of this section applies may be renewed, reissued, or modified to contain a less stringent effluent limitation applicable to a pollutant, if –*
> > > *(A) Material and substantial alterations or additions to the permitted facility occurred after permit issuance which justify the application of the less stringent effluent limitation;*
> > > *(B)(1) Information is available which was not available at the time of permit issuance (other than revised regulations, guidance, or test methods) and which would have justified to application of a less stringent effluent limitation at the time of permit issuance; or*
> > > *(2) The Administrator determines that technical mistakes or mistaken interpretations of law were made in issuing the permit under section 402(a)(1)(b)*

As discussed in the Water Quality-Based Limitations - Toxics Screening Analyses Section of this Fact Sheet, the two (2) year average effluent limits for Total Zinc and Fluoride are both below the most stringent criterion. Also, the Toxics Screening analyses no longer requires monitoring requirements for these two parameters. This new information qualifies the facility to provision to allow less stringent limits pursuant to 40 CFR 122.44 (l)(2)(i)(B)(1), additional monitoring data that documents the effluent limits consistently below the most stringent criterion, the monitoring requirements for Total Zinc and Fluoride will be removed from the permit. The StreamStats calculated Q_{7-10} flow (0.0124 cfs) and adjusted Q_{7-10} flow (0.0206 cfs) both yield the same results of removing Total Zinc and Fluoride from the permit monitoring requirements.

Effluent Limitations and Monitoring Requirements for Outfall 001

During the interim period (one year after permit effective date) the previous permit effluent limit for TRC will be imposed (0.5 $^{mg}/_{L}$ monthly average and 1.17 $^{mg}/_{L}$ daily maximum) as reflected in Table 4. The final effluent limits applicable at Outfall 001 are the more stringent of TBELs, WQBELs, regulatory effluent standards, and monitoring requirements as summarized in Table 5. The applicable limits and monitoring requirements provided below are based on those in Tables 1 and 2 of this Fact Sheet.

Table 4. Interim Effluent limits and monitoring requirements for Outfall 001

Parameter	Mass (pounds)		Concentration (mg/L)		
	Average Monthly	Daily Maximum	Average Monthly	Daily Maximum	Instant Maximum
Flow (MGD)	Report	Report	—	—	—
Total Residual Chlorine	—	—	0.5	1.17	—
Total Suspended Solids	—	—	30.0	60.0	—
Iron (total)	—	—	2.0	4.0	—
Aluminum (total)	—	—	1.3	2.6	—
Manganese (total)	—	—	1.0	2.0	—
pH (S.U.)	Within the range of 6.0 to 9.0				

Table 5. Final Effluent limits and monitoring requirements for Outfall 001

Parameter	Mass (pounds)		Concentration (mg/L)			Basis
	Average Monthly	Daily Maximum	Average Monthly	Daily Maximum	Instant Maximum	
Flow (MGD)	Report	Report	—	—	—	25 Pa. Code § 92a.61(d)(1)
Total Residual Chlorine	—	—	0.080	0.188	—	25 Pa. Code § 92a.48(b)
Total Suspended Solids	—	—	30.0	60.0	—	40 CFR § 122.144
Iron (total)	—	—	2.0	4.0	—	TMDL
Aluminum (total)	—	—	1.3	2.6	—	TMDL
Manganese (total)	—	—	1.0	2.0	—	TMDL
pH (S.U.)	Within the range of 6.0 to 9.0					25 Pa. Code § 95.2

Monitoring Frequency for Outfall 001

Monitoring requirements for both interim and final effluent monitoring periods are based on the previous permits monitoring requirements for the facility are displayed in Table 5 below.

Table 6. Monitoring Requirements for Outfall 001

Parameter	Sample Type	Minimum Sample Frequency
Flow (MGD)	Meter	2/Month
TRC	Grab	2/Month
TSS	Grab	2/Month
Iron (total)	Grab	2/Month
Aluminum (total)	Grab	2/Month
Manganese (total)	Grab	2/Month
pH (S.U.)	Grab	2/Month

Development of Effluent Limitations

Outfall No.	002	**Design Flow (MGD)**	0.001
Latitude	40º 01' 28"	**Longitude**	-79º 07' 58"

Wastewater Description: Lagoon underdrain groundwater.

Review of historic Total Residual Chlorine (TRC) concentrations reported on the Discharge Monitoring Reports (DMR) shows that occasionally an elevated result occurs. Three results over the past 4 years document elevated TRC concentration results (0.67 $^{mg}/_{L}$ on March 2019, 0.21 $^{mg}/_{L}$ on June 2018 and 0.11 $^{mg}/_{L}$ on June 2015). Typical DMR concentrations of TRC for Coxes Creek WTP are 0.05 $^{mg}/_{L}$. The elevated results are more an anomaly than a trend. No additional monitoring is recommended for TRC.

Technology-Based Limitations

The Coxes Creek Water Treatment Plant Outfall 002 is not subject to Federal Effluent Limitation Guidelines (ELGs) as the SIC code is not listed under 40 CFR parts 405 through 471.

This Outfall is an underdrain outfall to prevent groundwater from building up under the lagoon liner. If the lagoon would develop an integrity issue, Outfall 002 monitoring data would reflect elevated parameters that would be expected from the discharge of Outfall 001. Outfall 002 helps to give separation of the groundwater and the lagoon liner, but also functions as a leak detection zone, therefore, the monitoring limits from Outfall 001 will be applied to Outfall 002.

Schedule of Compliance

TRC at Outfall 002 will have a compliance schedule to give the facility time to implement the required changes to be able to achieve the new WQBELs effluent limits, pending the return of the Pre-Draft Permit Survey for Toxic Pollutants. The Draft Permit was developed assuming a three (3) year compliance schedule before the new WQBEL takes effect at the beginning of the second year of the renewed permit. During the interim period (one year after permit effective date) the previous permit effluent limit for TRC will be imposed (0.5 $^{mg}/_{L}$ monthly average and 1.17 $^{mg}/_{L}$ daily maximum).

Anti-Backsliding

Section 402(o) of the Clean Water Act (CWA), enacted in the Water Quality Act of 1987, establishes anti-backsliding rules governing two situations. The first situation occurs when a permittee seeks to revise a Technology-Based effluent limitation based on BPJ to reflect a subsequently promulgated effluent guideline which is less stringent. The second situation addressed by Section 402(o) arises when a permittee seeks relaxation of an effluent limitation which is based upon a State treatment standard of water quality standard.

Previous limits can be used pursuant to EPA's anti-backsliding regulation 40 CFR 122.44 (l) Reissued permits. (1) Except as provided in paragraph (l)(2) of this section when a permit is renewed or reissued. Interim effluent limitations, standards or conditions must be at least as stringent as the final effluent limitations, standards, or conditions in the previous permit (unless the circumstances on which the previous permit was based have materially and substantially changed since the time the permit was issued and would constitute cause for permit modification or revocation and reissuance under §122.62). (2) In the case of effluent limitations established on the basis of Section 402(a)(1)(B) of the CWA, a permit may not be renewed, reissued, or modified on the basis of effluent guidelines promulgated under section 304(b) subsequent to the original issuance of such permit, to contain effluent limitations which are less stringent than the comparable effluent limitations in the previous permit.

As discussed in the discussion for Outfall 001 Water Quality-Based Limitations - Toxics Screening Analyses Section of this Fact Sheet, the two (2) year average effluent limits for Total Zinc and Fluoride are both below the most stringent criterion. Also, the Toxics Screening analyses no longer requires monitoring requirements for these two parameters. This new information qualifies the facility to provision to allow less stringent limits pursuant to 40 CFR 122.44 (l)(2)(i)(B)(1), additional monitoring data that documents the effluent limits consistently below the most stringent criterion, the monitoring requirements for Total Zinc and Fluoride will be removed from the permit.

The previous permit imposed a monitoring frequency of twice per quarter for the discharges from Outfall 002. The permit included an average monthly effluent limitation. Typically, the Department would require the collection of both samples during the same calendar month in order to accurately calculate the average monthly discharge concentration. Due to the frequency of discharge at Outfall 002 however, this method is not routinely feasible. The Department is aware that the collection of two samples per quarter does not always allow for the calculation of an average monthly discharge

concentration. Therefore, the Department has modified the monitoring frequencies at Outfall 002 to more correctly define the type of samples which are currently collected. Sample analysis results submitted with the discharge monitoring reports will reflect the minimum, average and maximum discharge concentrations (where applicable) per quarterly submission. The previously imposed quarterly monitoring frequency will remain in effect.

Effluent Limitations and Monitoring Requirements for Outfall 002

Effluent limits applicable at Outfall 002 are mirror from Outfall 001. During the interim period (one year after permit effective date) the previous permit effluent limit for TRC will be imposed (0.5 $^{mg}/_{L}$ monthly average and 1.17 $^{mg}/_{L}$ daily maximum) as reflected in Table 7. The final effluent limits and monitoring requirements as summarized in Table 8. The applicable limits and monitoring requirements provided below are based on those in Tables 1 and 2 of this Fact Sheet.

Table 7. Interim Effluent limits and monitoring requirements for Outfall 002

Parameter	Mass (pounds)		Concentration (mg/L)		
	Average Monthly	Daily Maximum	Average Monthly	Daily Maximum	Instant Maximum
Flow (MGD)	Report	Report	—	—	—
Total Residual Chlorine	—	—	0.5	1.17	—
Total Suspended Solids	—	—	30.0	60.0	—
Iron (total)	—	—	2.0	4.0	—
Aluminum (total)	—	—	1.3	2.6	—
Manganese (total)	—	—	1.0	2.0	—
pH (S.U.)	Within the range of 6.0 to 9.0				

Table 8. Final Effluent limits and monitoring requirements for Outfall 002

Parameter	Mass (pounds)		Concentration (mg/L)			Basis
	Average Monthly	Daily Maximum	Average Monthly	Daily Maximum	Instant Maximum	
Flow (MGD)	Report	Report	—	—	—	25 Pa. Code § 92a.61(d)(1)
Total Residual Chlorine	—	—	—	0.188	—	25 Pa. Code § 92a.48(b)
Total Suspended Solids	—	—	—	60.0	—	40 CFR § 122.144
Iron (total)	—	—	—	4.0	—	TMDL
Aluminum (total)	—	—	—	2.6	—	TMDL
Manganese (total)	—	—	—	2.0	—	TMDL
pH (S.U.)	Within the range of 6.0 to 9.0					25 Pa. Code § 95.2

Monitoring Frequency for Outfall 002

Monitoring requirements are based on the previous permits monitoring requirements for the facility are displayed in Table 9 below.

Table 9. Monitoring Requirements for Outfall 002

Parameter	Sample Type	Minimum Sample Frequency
Flow (MGD)	Meter	2/Quarter
TRC	Grab	2/Quarter
TSS	Grab	2/Quarter
Iron (total)	Grab	2/Quarter
Aluminum (total)	Grab	2/Quarter
Manganese (total)	Grab	2/Quarter
pH (S.U.)	Grab	2/Quarter

Proposed Interim Effluent Limitations and Monitoring Requirements

The limitations and monitoring requirements specified below are proposed for the draft permit, and reflect the most stringent limitations amongst technology, water quality and BPJ. Instantaneous Maximum (IMAX) limits are determined using multipliers of 2 (conventional pollutants) or 2.5 (toxic pollutants). Sample frequencies and types are derived from the "NPDES Permit Writer's Manual" (362-0400-001), SOPs and/or BPJ.

Outfall 001, Effective Period: Permit Effective Date through Three Years After Permit Effective Date.

Parameter	Effluent Limitations						Monitoring Requirements	
	Mass Units (lbs/day) (1)		Concentrations (mg/L)				Minimum (2) Measurement Frequency	Required Sample Type
	Average Monthly	Daily Maximum	Instant. Minimum	Average Monthly	Daily Maximum	Instant. Maximum		
Flow (MGD)	Report	Report	XXX	XXX	XXX	XXX	2/month	Measured
pH (S.U.)	XXX	XXX	6.0	XXX	XXX	9.0	2/month	Grab
TRC	XXX	XXX	XXX	0.5	1.17	XXX	2/month	Grab
TSS	XXX	XXX	XXX	30.0	60.0	XXX	2/month	Grab
Total Aluminum	XXX	XXX	XXX	1.3	2.6	XXX	2/month	Grab
Total Iron	XXX	XXX	XXX	2.0	4.0	XXX	2/month	Grab
Total Manganese	XXX	XXX	XXX	1.0	2.0	XXX	2/month	Grab

Proposed Final Effluent Limitations and Monitoring Requirements

The limitations and monitoring requirements specified below are proposed for the draft permit, and reflect the most stringent limitations amongst technology, water quality and BPJ. Instantaneous Maximum (IMAX) limits are determined using multipliers of 2 (conventional pollutants) or 2.5 (toxic pollutants). Sample frequencies and types are derived from the "NPDES Permit Writer's Manual" (362-0400-001), SOPs and/or BPJ.

Outfall 001, Effective Period: Three Years After Permit Effective Date through Permit Expiration Date.

Parameter	Effluent Limitations						Monitoring Requirements	
	Mass Units (lbs/day) (1)		Concentrations (mg/L)				Minimum (2) Measurement Frequency	Required Sample Type
	Average Monthly	Daily Maximum	Instant. Minimum	Average Monthly	Daily Maximum	Instant. Maximum		
Flow (MGD)	Report	Report	XXX	XXX	XXX	XXX	2/month	Measured
pH (S.U.)	XXX	XXX	6.0	XXX	XXX	9.0	2/month	Grab
TRC	XXX	XXX	XXX	0.080	0.188	XXX	2/month	Grab
TSS	XXX	XXX	XXX	30.0	60.0	XXX	2/month	Grab
Total Aluminum	XXX	XXX	XXX	1.3	2.6	XXX	2/month	Grab
Total Iron	XXX	XXX	XXX	2.0	4.0	XXX	2/month	Grab
Total Manganese	XXX	XXX	XXX	1.0	2.0	XXX	2/month	Grab

Proposed Interim Effluent Limitations and Monitoring Requirements

The limitations and monitoring requirements specified below are proposed for the draft permit, and reflect the most stringent limitations amongst technology, water quality and BPJ. Instantaneous Maximum (IMAX) limits are determined using multipliers of 2 (conventional pollutants) or 2.5 (toxic pollutants). Sample frequencies and types are derived from the "NPDES Permit Writer's Manual" (362-0400-001), SOPs and/or BPJ.

Outfall 002, Effective Period: Permit Effective Date through Three Years After Permit Effective Date.

Parameter	Effluent Limitations						Monitoring Requirements	
	Mass Units (lbs/day) (1)		Concentrations (mg/L)				Minimum (2) Measurement Frequency	Required Sample Type
	Average Quarterly	Daily Maximum	Instant. Minimum	Average Quarterly	Daily Maximum	Instant. Maximum		
Flow (MGD)	Report	Report	XXX	XXX	XXX	XXX	2/quarter	Measured
pH (S.U.)	XXX	XXX	6.0	XXX	XXX	9.0	2/quarter	Grab
TRC	XXX	XXX	XXX	Report	1.17	XXX	2/quarter	Grab
TSS	XXX	XXX	XXX	Report	60.0	XXX	2/quarter	Grab
Total Aluminum	XXX	XXX	XXX	Report	2.6	XXX	2/quarter	Grab
Total Iron	XXX	XXX	XXX	Report	4.0	XXX	2/quarter	Grab
Total Manganese	XXX	XXX	XXX	Report	2.0	XXX	2/quarter	Grab

Proposed Final Effluent Limitations and Monitoring Requirements

The limitations and monitoring requirements specified below are proposed for the draft permit, and reflect the most stringent limitations amongst technology, water quality and BPJ. Instantaneous Maximum (IMAX) limits are determined using multipliers of 2 (conventional pollutants) or 2.5 (toxic pollutants). Sample frequencies and types are derived from the "NPDES Permit Writer's Manual" (362-0400-001), SOPs and/or BPJ.

Outfall 002, Effective Period: Three Years After Permit Effective Date through Permit Expiration Date.

Parameter	Effluent Limitations						Monitoring Requirements	
	Mass Units (lbs/day) (1)		Concentrations (mg/L)				Minimum (2) Measurement Frequency	Required Sample Type
	Average Quarterly	Daily Maximum	Instant. Minimum	Average Quarterly	Daily Maximum	Instant. Maximum		
Flow (MGD)	Report	Report	XXX	XXX	XXX	XXX	2/quarter	Measured
pH (S.U.)	XXX	XXX	6.0	XXX	XXX	9.0	2/quarter	Grab
TRC	XXX	XXX	XXX	Report	0.188	XXX	2/quarter	Grab
TSS	XXX	XXX	XXX	Report	60.0	XXX	2/quarter	Grab
Total Aluminum	XXX	XXX	XXX	Report	2.6	XXX	2/quarter	Grab
Total Iron	XXX	XXX	XXX	Report	4.0	XXX	2/quarter	Grab
Total Manganese	XXX	XXX	XXX	Report	2.0	XXX	2/quarter	Grab

	Tools and References Used to Develop Permit
☐	WQM for Windows Model (see Attachment)
☐	PENTOXSD for Windows Model (see Attachment)
☒	TRC Model Spreadsheet (see Attachment **C**)
☐	Temperature Model Spreadsheet (see Attachment)
☒	Toxics Screening Analysis Spreadsheet (see Attachment **B**)
☐	Water Quality Toxics Management Strategy, 361-0100-003, 4/06.
☐	Technical Guidance for the Development and Specification of Effluent Limitations, 362-0400-001, 10/97.
☐	Policy for Permitting Surface Water Diversions, 362-2000-003, 3/98.
☐	Policy for Conducting Technical Reviews of Minor NPDES Renewal Applications, 362-2000-008, 11/96.
☒	Technology-Based Control Requirements for Water Treatment Plant Wastes, 362-2183-003, 10/97.
☐	Technical Guidance for Development of NPDES Permit Requirements Steam Electric Industry, 362-2183-004, 12/97.
☐	Pennsylvania CSO Policy, 385-2000-011, 9/08.
☐	Water Quality Antidegradation Implementation Guidance, 391-0300-002, 11/03.
☐	Implementation Guidance Evaluation & Process Thermal Discharge (316(a)) Federal Water Pollution Act, 391-2000-002, 4/97.
☒	Determining Water Quality-Based Effluent Limits, 391-2000-003, 12/97.
☐	Implementation Guidance Design Conditions, 391-2000-006, 9/97.
☐	Technical Reference Guide (TRG) WQM 7.0 for Windows, Wasteload Allocation Program for Dissolved Oxygen and Ammonia Nitrogen, Version 1.0, 391-2000-007, 6/2004.
☐	Interim Method for the Sampling and Analysis of Osmotic Pressure on Streams, Brines, and Industrial Discharges, 391-2000-008, 10/1997.
☐	Implementation Guidance for Section 95.6 Management of Point Source Phosphorus Discharges to Lakes, Ponds, and Impoundments, 391-2000-010, 3/99.
☐	Technical Reference Guide (TRG) PENTOXSD for Windows, PA Single Discharge Wasteload Allocation Program for Toxics, Version 2.0, 391-2000-011, 5/2004.
☐	Implementation Guidance for Section 93.7 Ammonia Criteria, 391-2000-013, 11/97.
☐	Policy and Procedure for Evaluating Wastewater Discharges to Intermittent and Ephemeral Streams, Drainage Channels and Swales, and Storm Sewers, 391-2000-014, 4/2008.
☐	Implementation Guidance Total Residual Chlorine (TRC) Regulation, 391-2000-015, 11/1994.
☐	Implementation Guidance for Temperature Criteria, 391-2000-017, 4/09.
☐	Implementation Guidance for Section 95.9 Phosphorus Discharges to Free Flowing Streams, 391-2000-018, 10/97.
☐	Implementation Guidance for Application of Section 93.5(e) for Potable Water Supply Protection Total Dissolved Solids, Nitrite-Nitrate, Non-Priority Pollutant Phenolics and Fluorides, 391-2000-019, 10/97.
☐	Field Data Collection and Evaluation Protocol for Determining Stream and Point Source Discharge Design Hardness, 391-2000-021, 3/99.
☐	Implementation Guidance for the Determination and Use of Background/Ambient Water Quality in the Determination of Wasteload Allocations and NPDES Effluent Limitations for Toxic Substances, 391-2000-022, 3/1999.
☐	Design Stream Flows, 391-2000-023, 9/98.
☐	Field Data Collection and Evaluation Protocol for Deriving Daily and Hourly Discharge Coefficients of Variation (CV) and Other Discharge Characteristics, 391-2000-024, 10/98.
☐	Evaluations of Phosphorus Discharges to Lakes, Ponds and Impoundments, 391-3200-013, 6/97.
☐	Pennsylvania's Chesapeake Bay Tributary Strategy Implementation Plan for NPDES Permitting, 4/07.
☐	SOP:
☐	Other:

ATTACHMENTS

ATTACHMENT A: STREAMSTATS DATA

ATTACHMENT B: TOXICS SCREENING ANALYSIS SPREADSHEET

ATTACHMENT C: TOTAL RESIDUAL CHLORINE EVALUATION

ATTACHMENT A

STREAMSTATS DATA

StreamStats Report Coxes Creek WTP Outfall 001

Region ID:	PA
Workspace ID:	PA20190221170011899000
Clicked Point (Latitude, Longitude):	40.02526, -79.13280
Time:	2019-02-21 12:00:27 -0500

Basin Characteristics

Parameter Code	Parameter Description	Value	Unit
DRNAREA	Area that drains to a point on a stream	1.07	square miles
ELEV	Mean Basin Elevation	2143.2	feet
CARBON	Percentage of area of carbonate rock	0	percent
PRECIP	Mean Annual Precipitation	43	inches
FOREST	Percentage of area covered by forest	41	percent
URBAN	Percentage of basin with urban development	1	percent

Low-Flow Statistics Parameters [100 Percent (1.06 square miles) Low Flow Region 4]

Parameter Code	Parameter Name	Value	Units	Min Limit	Max Limit
DRNAREA	Drainage Area	1.07	square miles	2.26	1400
ELEV	Mean Basin Elevation	2143.2	feet	1050	2580

Low-Flow Statistics Disclaimers [100 Percent (1.06 square miles) Low Flow Region 4]

One or more of the parameters is outside the suggested range. Estimates were extrapolated with unknown errors

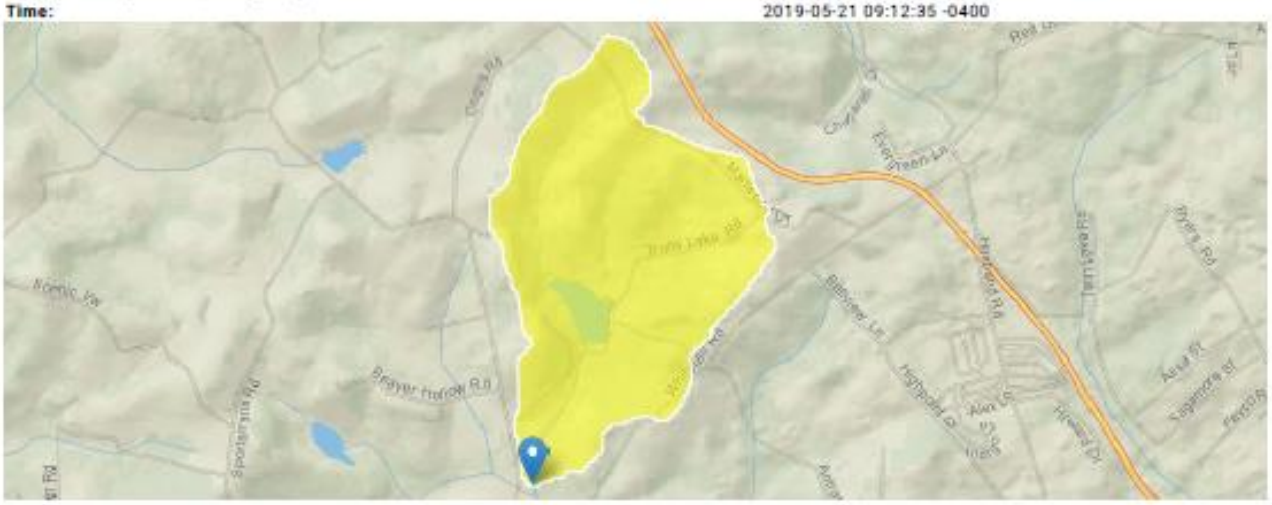
Low-Flow Statistics Flow Report [100 Percent (1.06 square miles) Low Flow Region 4]

Statistic	Value	Unit
7 Day 2 Year Low Flow	0.0492	ft^3/s
30 Day 2 Year Low Flow	0.0979	ft^3/s
7 Day 10 Year Low Flow	0.0124	ft^3/s
30 Day 10 Year Low Flow	0.0278	ft^3/s
90 Day 10 Year Low Flow	0.0647	ft^3/s

Low-Flow Statistics Citations

StreamStats Report Coxes Creek WTP Outfall 002

Region ID:	PA
Workspace ID:	PA20190521131218320000
Clicked Point (Latitude, Longitude):	40.02421, -79.13278
Time:	2019-05-21 09:12:35 -0400



Basin Characteristics

Parameter Code	Parameter Description	Value	Unit
DRNAREA	Area that drains to a point on a stream	1.11	square miles
ELEV	Mean Basin Elevation	2139.8	feet

Low-Flow Statistics Parameters [Low Flow Region 4]

Parameter Code	Parameter Name	Value	Units	Min Limit	Max Limit
DRNAREA	Drainage Area	1.11	square miles	2.26	1400
ELEV	Mean Basin Elevation	2139.8	feet	1050	2580

Low-Flow Statistics Disclaimers [Low Flow Region 4]

One or more of the parameters is outside the suggested range. Estimates were extrapolated with unknown errors

Low-Flow Statistics Flow Report [Low Flow Region 4]

Statistic	Value	Unit
7 Day 2 Year Low Flow	0.0512	ft^3/s
30 Day 2 Year Low Flow	0.102	ft^3/s
7 Day 10 Year Low Flow	0.0129	ft^3/s
30 Day 10 Year Low Flow	0.029	ft^3/s
90 Day 10 Year Low Flow	0.0673	ft^3/s

Low-Flow Statistics Citations

Stuckey, M.H.,2006, Low-flow, base-flow, and mean-flow regression equations for Pennsylvania streams: U.S. Geological Survey Scientific Investigations Report 2006-5130, 84 p. (http://pubs.usgs.gov/sir/2006/5130/)

USGS Data Disclaimer: Unless otherwise stated, all data, metadata and related materials are considered to satisfy the quality standards relative to the purpose for which the data were collected. Although these data and associated metadata have been reviewed for accuracy and completeness and approved for release by the U.S. Geological Survey (USGS), no warranty expressed or implied is made regarding the display or utility of the data for other purposes, nor on all computer systems, nor shall the act of distribution constitute any such warranty.

ATTACHMENT B

TOXICS SCREENING ANALYSIS SPREADSHEET

TOXICS SCREENING ANALYSIS
WATER QUALITY POLLUTANTS OF CONCERN
VERSION 2.6

CLEAR FORM

Facility: **Coxes Creek WTP** NPDES Permit No.: **PA0216763** Outfall: **001**
Analysis Hardness (mg/L): **109** Discharge Flow (MGD): **0.04** Analysis pH (SU): **7**
Stream Flow, Q_{7-10} (cfs): **0.04**

	Parameter	Maximum Concentration in Application or DMRs (µg/L)		Most Stringent Criterion (µg/L)	Candidate for PENTOXSD Modeling?	Most Stringent WQBEL (µg/L)	Screening Recommendation
Group 1	Total Dissolved Solids		178000	500000	No		
	Chloride		15000	250000	No		
	Bromide	<	200	N/A	No		
	Sulfate		12000	250000	No		
	Fluoride		200	2000	No		
Group 2	Total Aluminum	<	50	750	No		
	Total Antimony	<	0.5	5.6	No (Value < QL)		
	Total Arsenic	<	0.5	10	No (Value < QL)		
	Total Barium		185	2400	No		
	Total Beryllium	<	0.5	N/A	No		
	Total Boron		30	1600	No		
	Total Cadmium	<	0.1	0.288	No (Value < QL)		
	Total Chromium	<	0.5	N/A	No		
	Hexavalent Chromium	<	1	10.4	No (Value < QL)		
	Total Cobalt	<	2	19	No		
	Total Copper		2.5	10.0	No		
	Total Cyanide	<	10	N/A	No		
	Total Iron		190	1500	No		
	Dissolved Iron	<	50	300	No		
	Total Lead	<	0.2	3.6	No (Value < QL)		
	Total Manganese		110	1000	No		
	Total Mercury	<	0.1	0.05	No (Value < QL)		
	Total Molybdenum	<	10	N/A	No		
	Total Nickel		0.5	56.1	No		
	Total Phenols (Phenolics)	<	10	5	Yes		
	Total Selenium	<	0.5	5.0	No (Value < QL)		
	Total Silver	<	0.1	4.4	No (Value < QL)		
	Total Thallium	<	0.1	0.24	No (Value < QL)		
	Total Zinc		10.1	128.9	No		

Phenols guidelines for freshwater aquatic life is 600 µg/l as a 24-hr average. The discharge is not as potable water, therefore, the drinking water criteria do not apply for this limit.

TOXICS SCREENING ANALYSIS
WATER QUALITY POLLUTANTS OF CONCERN
VERSION 2.6

CLEAR FORM

Facility: **Coxes Creek WTP**
NPDES Permit No.: **PA0216763**
Outfall: **002**
Analysis Hardness (mg/L): **85.6**
Discharge Flow (MGD): **0.001**
Analysis pH (SU): **7**
Stream Flow, Q_{7-10} (cfs): **0.0129**

	Parameter		Maximum Concentration in Application or DMRs (µg/L)	Most Stringent Criterion (µg/L)	Candidate for PENTOXSD Modeling?	Most Stringent WQBEL (µg/L)	Screening Recommendation
Group 1	Total Dissolved Solids		90000	500000	No		
	Chloride		5000	250000	No		
	Bromide	<	200	N/A	No		
	Sulfate		12000	250000	No		
	Fluoride	<	100	2000	No (Value < QL)		
Group 2	Total Aluminum	<	100	750	No		
	Total Antimony	<	1	5.6	No (Value < QL)		
	Total Arsenic	<	1	10	No (Value < QL)		
	Total Barium		19	2400	No		
	Total Beryllium	<	1	N/A	No		
	Total Boron	<	50	1600	No (Value < QL)		
	Total Cadmium	<	0.2	0.241	No (Value < QL)		
	Total Chromium	<	1	N/A	No		
	Hexavalent Chromium	<	1	10.4	No (Value < QL)		
	Total Cobalt	<	5	19	No		
	Total Copper	<	1	8.2	No (Value < QL)		
	Total Cyanide	<	20	N/A	No		
	Total Iron	<	50	1500	No		
	Dissolved Iron	<	50	300	No		
	Total Lead	<	1	2.6	No (Value < QL)		
	Total Manganese	<	10	1000	No		
	Total Mercury	<	0.2	0.05	No (Value < QL)		
	Total Molybdenum	<	20	N/A	No		
	Total Nickel	<	0.5	45.7	No (Value < QL)		
	Total Phenols (Phenolics)	<	20	5	Yes		
	Total Selenium	<	1	5.0	No (Value < QL)		
	Total Silver	<	0.2	2.9	No (Value < QL)		
	Total Thallium	<	0.2	0.24	No (Value < QL)		
	Total Zinc	<	5	105	No (Value < QL)		

Phenols guidelines for freshwater aquatic life is 600 µg/l as a 24-hr average. The discharge is not as potable water, therefore, the drinking water criteria do not apply for this limit.

Attachment C

Total Residual Chlorine Evaluation

TRC EVALUATION

0.0206	= Q stream (cfs)	0.5	= CV Daily
0.04	= Q discharge (MGD)	0.5	= CV Hourly
4	= no. samples	1	= AFC_Partial Mix Factor
0.3	= Chlorine Demand of Stream	1	= CFC_Partial Mix Factor
0	= Chlorine Demand of Discharge	15	= AFC_Criteria Compliance Time (min)
0.5	= BAT/BPJ Value	720	= CFC_Criteria Compliance Time (min)
	= % Factor of Safety (FOS)		=Decay Coefficient (K)

Source	Reference	AFC Calculations	Reference	CFC Calculations
TRC	**1.3.2.iii**	WLA afc = 0.125	**1.3.2.iii**	WLA cfc = 0.114
PENTOXSD TRG	**5.1a**	LTAMULT afc = 0.373	**5.1c**	LTAMULT cfc = 0.581
PENTOXSD TRG	**5.1b**	LTA_afc= 0.047	**5.1d**	LTA_cfc = 0.067

Source		Effluent Limit Calculations	
PENTOXSD TRG	5.1f	AML MULT = 1.720	
PENTOXSD TRG	5.1g	AVG MON LIMIT (mg/l) = 0.080	AFC
		INST MAX LIMIT (mg/l) = 0.188	

WLA afc	**(.019/e(-k*AFC_tc)) + [(AFC_Yc*Qs*.019/Qd*e(-k*AFC_tc))...** **...+ Xd + (AFC_Yc*Qs*Xs/Qd)]*(1-FOS/100)**
LTAMULT afc	EXP((0.5*LN(cvh^2+1))-2.326*LN(cvh^2+1)^0.5)
LTA_afc	wla_afc*LTAMULT_afc
WLA_cfc	**(.011/e(-k*CFC_tc) + [(CFC_Yc*Qs*.011/Qd*e(-k*CFC_tc))...** **...+ Xd + (CFC_Yc*Qs*Xs/Qd)]*(1-FOS/100)**
LTAMULT_cfc	EXP((0.5*LN(cvd^2/no_samples+1))-2.326*LN(cvd^2/no_samples+1)^0.5)
LTA_cfc	wla_cfc*LTAMULT_cfc
AML MULT	EXP(2.326*LN((cvd^2/no_samples+1)^0.5)-0.5*LN(cvd^2/no_samples+1))
AVG MON LIMIT	MIN(BAT_BPJ,MIN(LTA_afc,LTA_cfc)*AML_MULT)
INST MAX LIMIT	**1.5*((av_mon_limit/AML_MULT)/LTAMULT_afc)**